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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte CHRISTOPHER JOHNSON, MARINA TARUNINA,
YEN CHOO, SIMON LISTER, and ROBERT MERRIFIELD¹

Appeal 2016-000933
Application 13/395,857
Technology Center 1600

Before JEFFREY N. FREDMAN, RYAN H. FLAX, and
DEVON ZASTROW NEWMAN, *Administrative Patent Judges*.

NEWMAN, *Administrative Patent Judge*.

DECISION ON APPEAL

This appeal under 35 U.S.C. § 134 involves claims to a system for processing data resulting from a large number of cell culture samples, which have been rejected as directed to non-statutory subject matter.

We have jurisdiction under 35 U.S.C. § 6(b). We affirm.

¹ Appellants identify the Real Party in Interest as Plasticell Limited. App. Br. 1.

STATEMENT OF THE CASE

Background

The Specification discloses:

a method of processing cell culture data. The data comprises results from a large number of samples, the results being obtained by performing multiple stages of cell culture in succession on each sample, where each stage represents a cell culture treatment having a particular set of conditions, such that each sample follows a protocol specified by the identity and order of the treatments applied to the cell culture. The method comprises specifying a subset of the samples that yielded a desired cell culture outcome; and performing a computer-implemented analysis of the results from the samples in the subset to produce an ordering or grouping of the results. The ordering or grouping helps to identify one or more protocols that are effective for obtaining the desired cell culture outcome, wherein the analysis for producing the ordering or grouping utilizes information on similarities between different protocols.

Spec. 3:2–12.

The Issues

Claims 46 and 58–75 are rejected under 35 U.S.C. § 101 as directed to non-statutory subject matter. Ans. 2.

Claims 46, 72, and 73 are independent claims that illustrate the appealed subject matter and read as follows:

46. A method of processing cell culture data, said data comprising results from a large number of samples, the results being obtained by performing multiple stages of cell culture in succession on each sample, where each stage represents a cell culture treatment having a particular set of conditions, such that each sample follows a protocol specified by the identity and order of the treatments applied to the cell culture, said method comprising:

specifying a subset of the samples that yielded a desired cell culture outcome; and
performing, by computer, an analysis of the results from the samples in the subset to produce an ordering or grouping of the results, said ordering or grouping helping to identify one or more protocols that are effective for obtaining the desired cell culture outcome, wherein the analysis for producing the ordering or grouping utilises information on similarities between different protocols.

Independent claim 72 includes all of the limitations of claim 46, and additionally requires “[a] non-transitory computer readable medium having stored thereon a computer program for causing a processor to implement” the method.

73. An apparatus for processing cell culture data, said data comprising results from a large number of samples, the results being obtained by performing multiple stages of cell culture in succession on each sample, where each stage represents a cell culture treatment having a particular set of conditions, such that each sample follows a protocol specified by the identity and order of the treatments applied to the cell culture, said apparatus comprising:

a memory for containing data specifying a subset of the samples that yielded a desired cell culture outcome; and
a processor configured to perform a computer-implemented analysis of the results from the samples in the subset to produce an ordering or grouping for the results, said ordering or grouping helping to identify one or more protocols that are effective for obtaining the desired cell culture outcome, wherein the analysis for producing the ordering or grouping utilises information on similarities between different protocols.

App. Br. 17, 19, 20 (Claims App’x).

DISCUSSION

The Examiner finds that “[t]he claims are directed to the abstract idea of ordering or grouping the results from samples to help identify a protocol for obtaining a desired cell culture outcome. The claims include computational steps of analyzing results . . . [and] include utilizing mathematical algorithms.” Ans. 2–3. The Examiner finds:

[t]he additional elements or combination of elements in the claims other than the abstract idea per se amounts to no more than: mere instructions to implement the idea on a computer or a computer readable medium. The recited computer structure performs generic computer functions that are well-understood, routine, and conventional. Viewed as a whole, these additional claim elements do not provide meaningful limitations to transform the abstract idea into a patent eligible application of the abstract idea such that the claims amount to significantly more than the abstract idea itself.

Id. at 3.

We agree with the Examiner’s conclusion that claims 46, 72, and 73 are unpatentable as being directed to non-statutory subject matter, and address Appellants’ arguments below.

Appellants “accept that the analysis methods described in the present application utilize mathematical algorithms,” but “do not concede” that the ordering or grouping of the results is an abstract idea. Reply Br. 6; App. Br. 14. Appellants advance no argument on this issue in their Appeal Brief.²

² We understand and acknowledge Appellants’ argument, in their Reply Brief, that the present application does not prevent the use of the “**known** algorithms for grouping or ordering the protocols” recited in the claims in fields other than in the “very specific and focused context” of “processing certain types of cell culture data,” by which Appellants address the potential

Accordingly, Appellants waive any arguments on whether the claimed subject matter is an abstract idea. *See Hyatt v. Dudas*, 551 F.3d 1307, 1314 (Fed. Cir. 2008) (“When the appellant fails to contest a ground of rejection to the Board, . . . the Board may treat any argument with respect to that ground of rejection as waived.”).

Appellants argue that the rejection is improper under the second part of the two-part analysis in *Alice*, determining “whether any element or combination of elements, in the claim is sufficient to ensure that the claim amounts to significantly more than the judicial exception.” App. Br. 13.

Appellants argue

the independent claims each recite additional elements that amount to more than mere instructions to implement the idea on a computer [because they] specify that the samples selected into the specified subset are . . . **samples that yielded a desired cell culture outcome**. This limitation makes it clear that each sample (1) is a **cell culture sample** and (2) **yielded a desired outcome after receiving one or more cell culture treatments**. Cell culture samples and cell culture treatments are not mere instructions found within a computer or a computer readable medium. It thus logically follows that the additional limitations, which include the claim language related to cell culture outcomes and treatments, amount to **more than** mere

preemption concern noted in *Alice Corp. Pty. Ltd. v. CLS Bank Int’l*, 134 S. Ct. 2347 (2014). Reply Brief. 7–10 (emphasis original). While this may be so, Appellants do not address why the application of these algorithms to the processing of cell culture data is not itself an abstract idea. “[T]he absence of complete preemption does not demonstrate patent eligibility.” *Ariosa Diagnostics, Inc. v. Sequenom, Inc.*, 788 F.3d 1371, 1379 (Fed. Cir. 2015). “Where a patent’s claims are deemed only to disclose patent ineligible subject matter under the *Mayo* framework, as they are in this case, preemption concerns are fully addressed and made moot.” *Id.*

instructions to implement the idea on a computer or a computer readable medium.

App. Br. 14 (emphasis original). According to Appellants, “the limitations of the independent claims . . . include one or more improvements to another technology or technical field.” *Id.* Appellants argue that “[b]y using a computer to order and group samples that provided a desired outcome the claimed embodiments can weed out false positives (i.e. protocols or sequences of treatments that produced desired outcomes by chance occurrence).” *Id.* at 14–15. Appellants argue “the claimed embodiments **provide improvements to technical fields that involve using cell culture by providing a more sensitive and effective discrimination of protocols that should be investigated further,**” making the combination of elements “significantly more than an abstract idea.” *Id.* at 15.

In response, the Examiner argues the “claims do not recite a limitation where cell culture samples or cell culture treatments are created.” Ans. 4. Instead, the independent claims are

limited to only cell culture data and the analysis of cell culture data. . . . This represents an “analysis of the results” Since the limitations of performing an analysis in cell culture data or using a cell culture sample is not in the instant claims, these limitations cannot be used to demonstrate a practical application of the instant claims.

Id.

The Examiner further finds that the “improvement[s] to another technical field” claimed by Appellants “are obtained by performing further probability analysis to weed out false-positives,” as clarified in the Specification. *Id.* (citing Spec. 11, ll. 10–16; 19, ll. 5–28). The Examiner concludes that because “[t]he instant claims contain no recitation of the

methodology for weeding out false positives . . . the instant claims do not provide an improvement to another technical field.” *Id.*

In their Reply Brief, Appellants argue

claim 46 does not recite the particular (specific) example of avoiding false-positives, but it **does** recite “how to help to identify one or more protocols that are effective for obtaining the desired cell culture outcome.” For example, the skilled person would readily understand that if a large group or cluster of similar protocols were found within the subset of positive results (*i.e.* those samples that yield a desired outcome), this indicates that protocols which match, or are at least similar to, those protocols in the group or cluster, are likely to be the most effective for obtaining the desired cell outcome. This already represents a **specific and positive technical outcome** from the claimed invention.

Reply Br. 13–14.

We find the Examiner has the better position. As our reviewing court recently noted, “[p]recedent has recognized that specific technologic modifications to solve a problem or improve the functioning of a known system generally produce patent-eligible subject matter.” *Trading Techs. Int’l, Inc. v. CQG, Inc.*, Appeal No. 2016-1616, slip op. 7, (Jan. 18, 2017) (non-precedential). We do not find that to be the case here. Appellants do not assert that claim 46 recites an arguably inventive method of analysis resulting in a unique set of data; rather, Appellants acknowledge the calculations performed in the method are known. Reply Br. 7. Thus, this case is unlike *Bascom Global Internet Servs., Inc. v. AT&T Mobility LLC*, 827 F.3d 1341, 1350 (Fed. Cir. 2016), finding an inventive concept in the ordered combination of limitations providing for “the installation of a

filtering tool at a specific location, remote from the end-users, with customizable filtering features specific to each end user.”

Likewise, Appellants also do not argue claims 72 and 73 recite an inventive apparatus for performing or displaying the calculated results or that improves the performance of the computer system itself. Thus, this case is also unlike *DDR Holdings, LLC v. Hotels.com, L.P.*, 773 F.3d 1245, 1257 (Fed. Cir. 2014), finding an inventive concept in modification of conventional mechanics behind website display to produce dual-source integrated hybrid display.

We note that “[c]laims directed to the ‘process of gathering and analyzing information of a specified content, then displaying the results,’ without ‘any particular assertedly inventive technology for performing those functions,’ were held ineligible in *Electric Power Grp., LLC v. Alstom S.A.*, 830 F.3d 1350, 1354 (Fed. Cir. 2016).” *Trading Techs.*, slip op. 8. We find claim 46 to be analogous to that held patent-ineligible in *Electric Power*.

Moreover, we note that our reviewing court has recently held system claims for detecting improper access of a patient’s protected health information that include “a user interface” and a microprocessor to be patent ineligible abstract ideas. *FairWarning IP, LLC v. Iatric Sys., Inc.*, 839 F.3d 1089, 1096 (Fed. Cir. 2016). The Court explained that “limiting the claims to the computer field does not alone transform them into a patent-eligible application. *See Alice*, 134 S.Ct. at 2358.” *Id.* The Court held that:

[t]he limitations added in FairWarning’s system claims merely graft generic computer components onto otherwise-ineligible method claims. As such, these claims are patent ineligible along with claim 1 and its dependents.

Id. at 1096. We agree with the Examiner that Appellants’ restriction of otherwise-ineligible method claims to the analysis of cell culture data to produce an ordering or grouping of the results does not render those claims patent eligible.

Appellants do not explain how the mere act of analyzing cell culture data using known calculation methods against a set of parameters supplied by a user to identify results (e.g. “a desired cell culture outcome”) that are also specified by the user, and subjecting those results to further “known” analysis methods is transformative. The “**specific and positive technical outcome**” that “helps to provide additional value and insight from such experiments, and in particular from the experimental data” is data generated as a result of one or more known mathematical calculations. Reply Br. 14, 9. “Merely requiring the selection and manipulation of information—to provide a ‘humanly comprehensible’ amount of information useful for users . . . —by itself does not transform the otherwise-abstract processes of information collection and analysis.” *Electric Power*, 830 F.3d at 1355.

Appellants’ claimed analysis of cell culture data using known calculation methods against a set of externally supplied parameters to identify specified results does not provide any technological advance in the method of analysis or the process of analyzing the data. For example, there are no limited and new mathematical rules applied to the data or an improvement in the way the system components operate to analyze the data. Thus, we agree with the Examiner that the claim limitations, analyzed alone and in combination, fail to add “something more” to “transform” the claimed abstract idea of processing data resulting from a large number of cell culture

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samples to produce an ordering or grouping of the results into “a patent-eligible application.” *See Alice*, 134 S. Ct. at 2354, 2357.

Conclusion of Law

We affirm the rejection of claims 46, 72, and 73 under 35 U.S.C. § 101 as directed to non-statutory subject matter.

Claims 58–71, 74, and 75 have not been argued separately and therefore fall with claims 46, 72, and 73. 37 C.F.R. § 41.37(c)(1)(iv).

SUMMARY

We affirm the rejections of all claims as directed to non-statutory subject matter.

TIME PERIOD FOR RESPONSE

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a).

AFFIRMED